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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/534,323

05/09/2005

Jin Soo Seo

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09/21/2009

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EXAMINER

BITAR, NANCY

ART UNIT

PAPER NUMBER

2624

NOTIFICATION DATE

DELIVERY MODE

09/21/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

uspto@slwip.com

request@slwip.com

| | | | |
|------------------------------|--------------------------------------|-----------------------------------|--|
| Office Action Summary | Application No. 10/534,323 | Applicant(s) SEO ET AL. | |
| | Examiner NANCY BITAR | Art Unit 2624 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/13/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's response to the last Office Action, filed 5/13/2009, has been entered and made of record.
2. Claims 1-15 are currently pending.
3. Applicant arguments filed 7/13/2009; with respect to the rejection(s) of claim(s) 1-15 under 103 (a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Haitsma et al (US 7,549,052)

Examiner Notes

Examiner cites particular columns and line numbers in the references as applied to the claims below for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested that, in preparing responses, the applicant fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haitsma et al (US 7,549,052) in view of Pareira et al (template based recovery of Fourier based watermarks using log polar and log-log maps)

As to claims 1 and 2, Haitsma et al teaches a method of extracting a fingerprint from a multimedia an audio signal, the method comprising the steps of:

extracting a set of robust perceptual features from the audio signal (The audio clip is divided (12) into successive (preferably overlapping) frames. For each frame, the frequency spectrum is divided (15) into bands. A robust property of each band (e.g. energy) is computed (16) and represented (17) by a respective hash bit, see abstract); subjecting the extracted set of features to a Fourier-Mellin transform to compensate for speed changes in the audio signal (he spectral representation of every frame is computed by a Fourier transform circuit 13. In the next block 14, the absolute values (magnitudes) of the (complex) Fourier coefficients are computed, Figure 1, column 3 lines 64-column 4 lines 1-67), converting the transformed set of features into a sequence constituting the fingerprint (a bit derivation circuit 17 converts , column 4 lines 47-column 5 lines 1-42, figure 3) While Haitsma teaches a number of limitation above, Haitsma does not explicitly teach converting the transformed set of features into a sequence constituting the fingerprint.

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Pareira et al. teaches a step includes converting the magnitudes of the Fourier-Mellin transform (see section 4.4, magnitude of the FFT, pages 3-5). Because transferring the magnitude of the Fourier-Mellin transform renders the method robust against rotation scaling or aspect ratio changes. It would have been obvious to one of ordinary skill in the art to include the magnitude algorithm in Fourier transform of Haitsma et al in order to overcome the sampling problem and maximizing the number of points matched between the known template and the image. Therefore, the claimed invention would have been obvious to one of ordinary skill in the art at the time of the invention by applicant.

As to claim 3, Haitsma et al teaches the method as claimed in claim 1, wherein said converting step includes converting a derivative of the phase of the Fourier-Mellin transform. (figure 2)

As to claim 4, Pareira et al. teaches a method as claimed in claim 1, wherein Fourier-Mellin transform includes a one-dimensional log mapping process being applied to the set of perceptual features (see section 2.1 and 4.4).

As to claim 5, Pareira et al. teaches method as claimed in claim 1, wherein the audio signal forms part of an image or video signal and said Fourier-Mellin transform includes a two-dimensional log-polar mapping process being applied to the set of perceptual features (see section 4.1, log-polar mapping , page 3).

As to claim 6, Pareira et al. teaches method as claimed in claim 1, wherein the audio signal forms part of an image or video signal and said Fourier-Mellin transform includes a two-dimensional log-log mapping process being applied to the set of perceptual features (section 4.2, log-log mapping, page 3, see also section 4.4).

As to claim 7, Haitsma et al teaches the method as claimed in claim 1, wherein said extracting includes normalization of the set of perceptual features (see abstract, column 5 lines 1-53)

Claims 8- 15 differ from claims 1-7 only in that claims 1-7 are method claim whereas, claims 8-15 are an apparatus claim. Thus, claims 8-15 are analyzed as previously discussed with respect to claims 1-7 above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NANCY BITAR whose telephone number is (571)270-1041. The examiner can normally be reached on Mon-Fri (7:30a.m. to 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on 571-272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nancy Bitar/
Examiner, Art Unit 2624

/VIKKRAM BALI/
Supervisory Patent Examiner, Art Unit 2624